Abstract of the Disclosure

The present invention relates to a method and system for tiered digital broadcasting. A plurality of different bit streams representing digital data targeted for different services is received from a data source. Each bit-stream of the plurality of different bit-streams is modulated on a plurality of OFDM sub-carriers. Sub-carriers of different bit streams have different spectral efficiency. The parallel OFDM sub-carriers of each bit-stream are frequency interleaved with the parallel OFDM sub-carriers of the other bit streams of the plurality of different bit streams such that the parallel OFDM sub-carriers of each bit-stream are spread over an entire available frequency spectrum. The interleaved sub-carriers are transformed into time domain for providing a frequency interleaved OFDM signal. The OFDM signal is then upconverted to the frequency of a broadcasting channel and transmitted. The method and system according to the invention enables a broadcasting station to transmit multiple bit streams with different spectral efficiency using one RF channel allowing, for example, simultaneous transmission of digital TV for fixed and mobile recipients. Frequency interleaving of the OFDM sub-carriers of each of the multiple bit streams over the entire spectrum of a RF channel substantially reduces the risk that a signal is notched out by multipath distortion or fading.